

CLAIMS

1. A computer-implemented method for lazily registering dynamically generated code and corresponding unwind information of a process, said method comprising:

5 a) detecting a request for first unwind information related to first corresponding dynamically generated code;

 b) creating a module which includes data related to said first unwind information and said first corresponding dynamically generated code;

10 c) providing an application program interface which allows said data to be registered such that dynamic registration of said first unwind information and said first corresponding dynamically generated code is enabled; and

 d) coupling an application program interface invocation code sequence to said first corresponding dynamically generated code such that upon execution of said first corresponding dynamically generated code, said application program interface invocation code sequence instructs said application program interface to facilitate registration of said data.

20 2. The computer-implemented method for lazily registering dynamically generated code and corresponding unwind information of a process as recited in Claim 1 further comprising:

 e) repeating steps b) through d) for second dynamically generated code wherein said second dynamically generated code was produced prior to producing said first unwind information and said first corresponding dynamically generated code, and generating unwind information corresponding to said second dynamically generated code.

30 3. The computer-implemented method for lazily registering dynamically generated code and corresponding unwind information of a process as recited in Claim 2 wherein step e) is performed only when said second dynamically generated code has a corresponding return address which is called by said first corresponding dynamically generated code.

35 4. The computer-implemented method for lazily registering dynamically generated code and corresponding unwind information of a process as recited in Claim 1 wherein step a) comprises detecting said request for said first unwind information related to said first corresponding dynamically generated code by intercepting a call to a stack

unwinding mechanism.

5 5. The computer-implemented method for lazily registering
dynamically generated code and corresponding unwind information of a
process as recited in Claim 4 wherein said corresponding return address
of said second corresponding dynamically generated code is obtained by an
address mechanism coupled to said stack unwinding mechanism.

10 6. The computer-implemented method for lazily registering
dynamically generated code and corresponding unwind information of a
process as recited in Claim 1 wherein said first corresponding
dynamically generated code is comprised of instrumented code.

15 7. The computer-implemented method for lazily registering
dynamically generated code and corresponding unwind information of a
process as recited in Claim 1 wherein said second corresponding
dynamically generated code is comprised of instrumented code.

20 8. A computer-readable medium embodying instructions that
cause a computer to perform method for lazily registering dynamically
generated code and corresponding unwind information of a process, said
method comprising:

25 a) detecting a request for first unwind information related to first
corresponding dynamically generated code;

30 b) creating a module which includes data related to said first
unwind information and said first corresponding dynamically generated
code;

35 c) providing an application program interface which allows said
data to be registered such that dynamic registration of said first unwind
information and said first corresponding dynamically generated code is
enabled; and

d) coupling an application program interface invocation code
sequence to said first corresponding dynamically generated code such that
upon execution of said first corresponding dynamically generated code,
said application program interface invocation code sequence instructs
said application program interface to facilitate registration of said data.

9. The computer-readable medium of Claim 8 wherein said
instructions further cause said computer perform a step comprising:

e) repeating steps b) through d) for second dynamically generated code wherein said second dynamically generated code was produced prior to producing said first unwind information and said first corresponding dynamically generated code, and generating unwind information
 5 corresponding to said second dynamically generated code.

10. The computer-readable medium of Claim 9 wherein said instructions cause said computer to perform said step e) only when said second dynamically generated code has a corresponding return address
 10 which is called by said first corresponding dynamically generated code.

11. The computer-readable medium of Claim 8 wherein step a) comprises detecting said request for said first unwind information related to said first corresponding dynamically generated code by intercepting a
 15 call to a stack unwinding mechanism.

12. The computer-readable medium of Claim 11 wherein said corresponding return address of said second corresponding dynamically generated code is obtained by an address mechanism coupled to said stack
 20 unwinding mechanism.

13. The computer-readable medium of Claim 8 wherein said first corresponding dynamically generated code is comprised of instrumented
 25 code.

14. The computer-readable medium of Claim 8 wherein said second corresponding dynamically generated code is comprised of instrumented
 code.

30 15. An apparatus for lazily registering dynamically generated code and corresponding unwind information of a process, said apparatus comprising:

means for detecting a request for first unwind information related to first corresponding dynamically generated code;

35 means for creating a module which includes data related to said first unwind information and said first corresponding dynamically generated code;

means for providing an application program interface which allows said data to be registered such that dynamic registration of said first

unwind information and said first corresponding dynamically generated code is enabled; and

means for coupling an application program interface invocation code sequence to said first corresponding dynamically generated code such that upon execution of said first corresponding dynamically generated code, said application program interface invocation code sequence instructs said application program interface to facilitate registration of said data.

16. The apparatus of Claim 15 further comprising:

means for repeating steps b) through d) for second dynamically generated code wherein said second dynamically generated code was produced prior to producing said first unwind information and said first corresponding dynamically generated code, and generating unwind information corresponding to said second dynamically generated code.

17. The apparatus of Claim 16 comprising:

means for selectively performing step e) only when said second dynamically generated code has a corresponding return address which is called by said first corresponding dynamically generated code.

18. The apparatus of Claim 15 comprising:

means for performing step a) by detecting said request for said first unwind information related to said first corresponding dynamically generated code by intercepting a call to a stack unwinding mechanism.

19. The apparatus of Claim 18 comprising:

means for obtaining said corresponding return address of said second corresponding dynamically generated code using an address mechanism coupled to said stack unwinding mechanism.

20. The apparatus of Claim 15 wherein said first corresponding dynamically generated code is comprised of instrumented code.

21. The apparatus of Claim 15 wherein said second corresponding dynamically generated code is comprised of instrumented code.